

Veterans Boulevard

A Regionally Significant Interchange, Extension and Grade Separation Project

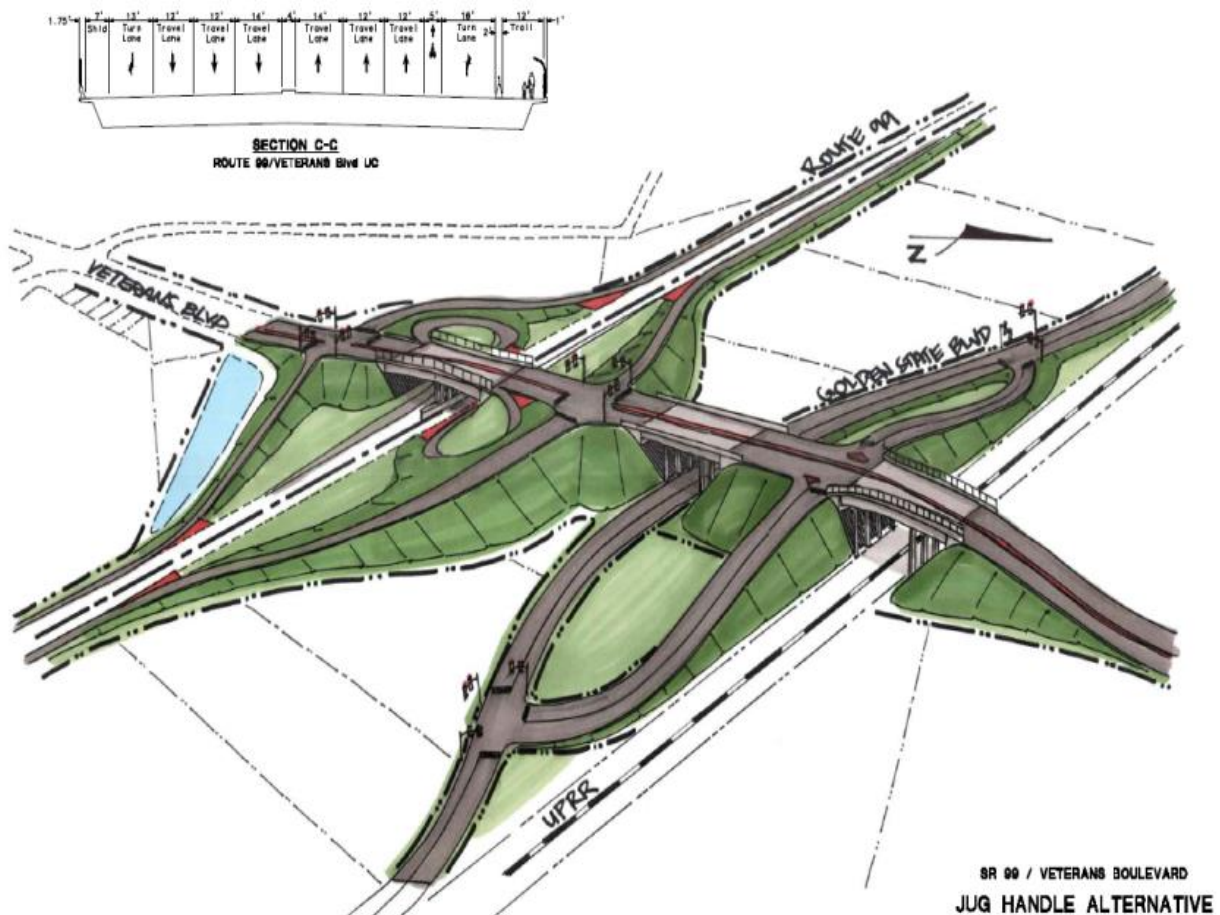


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I. Project Description

The Veterans Boulevard Interchange, Extension and Grade Separation Project (Veterans Boulevard) project is located on State Route 99 (SR-99) in central California. SR-99 is part of the California Freeway and Expressway System stretching almost the entire length of California's Central Valley. The project, located at the urban/rural divide, will address east-west traffic issues motorists' face when navigating local roadways, providing better connectivity between rural communities to the west and major centers of business, commerce and medical services to the east. As a primary goods movement route in the most productive agricultural region in the world, SR-99 is critical to economic vitality for the City of Fresno, State of California and United States of America. [Click here to view a video highlighting the project.](#)

Existing conditions create structural barriers, limit transportation options, and negatively impact economic opportunity and safety. Within the City of Fresno, portions of SR-99 become so congested that freight trucks and school buses are choked through 60-year-old, inadequate interchanges to move off and on the freeway. The Veterans Boulevard project includes: a six-lane arterial roadway in northwest Fresno, a freeway interchange at SR-99; grade separations over the Union Pacific Railroad, High-Speed Rail line and Golden State Boulevard, and; a pedestrian trail and adaptive intelligent transportation system technology to synchronize traffic operations in real-time. At-grade rail crossings citywide have seen a staggering 106 fatal train collisions in the last 11 years. This project will eliminate one at-grade crossing and provide an alternative route to avoid another. The community has rallied together to demonstrate how important this project is. The residents in west Fresno refer to themselves as [Forgotten Fresno](#) and have turned out in the hundreds to community meetings to advocate for Veterans Boulevard.

Veterans Boulevard is a regionally significant project designed to improve traffic capacity, enhance safety through smoother traffic operations and improve mobility for goods and people. The project is located adjacent to hundreds of retail and other commercial outlets; the improvements will alleviate freight traffic throughout north Fresno, helping to relieve congestion at both Shaw and Herndon Avenues and enhance connectivity to those aforementioned sites. Herndon Avenue is a major expressway connecting the City of Fresno to City of Clovis, beginning at SR-99 to the west, and crossing three of the four highways running through the community. Shaw Avenue is an arterial that runs the length of the City providing connections to thousands of businesses and other commercial and industrial employers. Shaw Avenue provides connections to Opportunity Zones (OZ) east of Veterans Boulevard (OZ # 06019004505, 06019003500, 06019005403 and 06019005408).

The City estimates that as a result of Veterans Boulevard, 15-million hours of travel time will be saved, at least 70,000 semi-truck interactions with at-grade railroad

crossings will be eliminated and collision/safety-related costs will be reduced by \$341.9 million or approximately \$11.4 million per year over the next 30 years.

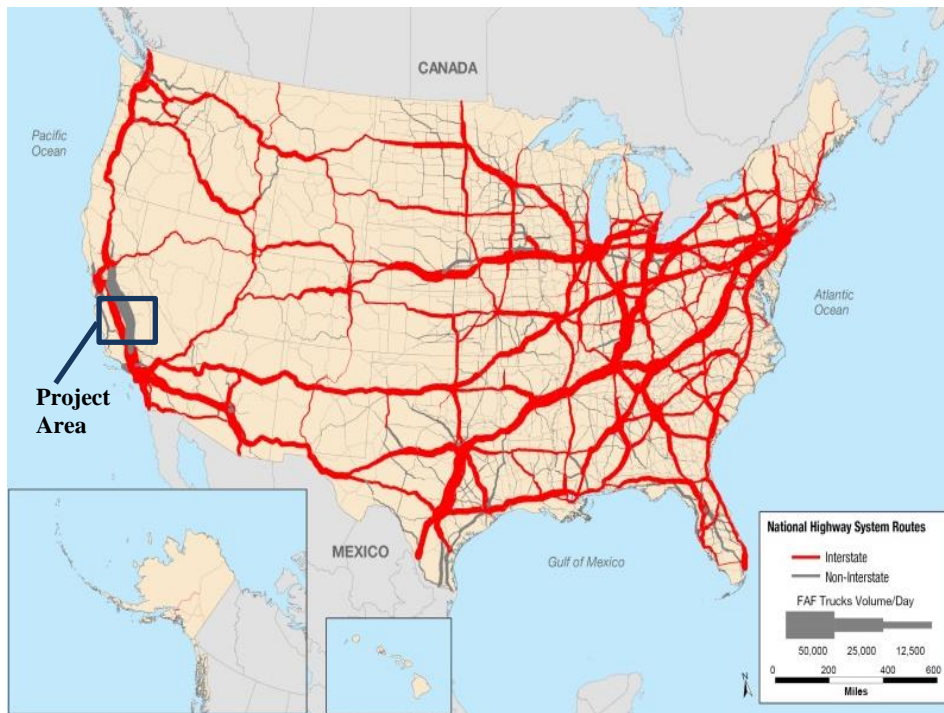


Figure 1 - The project area sees a lot of freight traffic. The average long-haul traffic on the National Highway System is projected to be some of the highest in the nation by 2040.

Figure 2 – Project Phasing	
Phase 1	Extend Bullard Avenue to its connection with Veterans Boulevard. <i>Fully Funded and Under Construction</i>
Phase 2	Construct a grade separation over Union Pacific Railroad and California High-Speed Rail tracks and vacate Carnegie Avenue from Bullard to existing Golden State Boulevard. <i>Fully Funded, Construction Out to Bid</i>
Phase 3	Construct the State Route 99 interchange and grade separation over the realigned Golden State Boulevard. <i>BUILD Funding Requested</i>
Phase 4	Extend Veterans Boulevard to connections with Herndon Avenue to the north and Shaw Avenue to the south. <i>BUILD Funding Requested for 4b</i> 4a: Shaw to Barstow 4b: Riverside to Herndon
Phase 5	Construct Veterans Boulevard Class I multipurpose trail from Shaw to Herndon. <i>Fully Funded</i> 5a: Herndon to Hayes 5b: Hayes to Shaw

BUILD funding totaling \$10.5 million will close the final funding gap and represent a 14.71% share of all future eligible costs. To most effectively leverage funding and ensure timely delivery, Veterans has been divided into five semi-concurrent phases summarized in Figure 1. An overall project map and individual phase maps are available [here](#).

PROJECT LOCATION

The City of Fresno is the fifth largest city in the state of California and the 35th largest in the nation with a population of 530,093 residents. The Veterans Boulevard Project is in the City of Fresno, CA at a latitude and longitude of 36.822020, -119.904461, along State Route 99 (SR-99) in Urbanized Area number 31843. The Census tracts in the City of Fresno that are impacted by this project include: 6019004207, 6019004215, and 6019004212. According to the Census, there are more than 23,000 residents in the immediate project area. Major employers, health care facilities and other critical destinations within approximately 2-miles of the project area include: Herndon-Barstow Elementary School, River Bluff Elementary School, and the Marketplace at El Paseo (25 retailers, business and restaurants located in the marketplace), United Health Centers, Sierra Sky Park and Saint Agnes Medical Clinic.

OPPORTUNITY ZONES

The County of Fresno has 47 Opportunity Zones, with approximately 76% of them located within city of Fresno limits and within 5-15 miles of Veterans Boulevard. [Within the City of Fresno's limits, Opportunity Zones are located along the central core, along the southern portion of SR-99 and in southeast Fresno.](#) The average household income of all Opportunity Zones in the County of Fresno is \$29,577.

The [Fresno County Economic Development Corporation](#) is currently working with [Central Valley Community Foundation](#) and the City of Fresno to explore developing a local fund to capture local investment. Veterans Boulevard will provide improved travel efficiencies and travel options along SR-99. These improvements will better connect residents living near Veterans Boulevard to employment opportunities in Opportunity Zones, and streamline commutes for Opportunity Zone residents to reach opportunities in north Fresno.

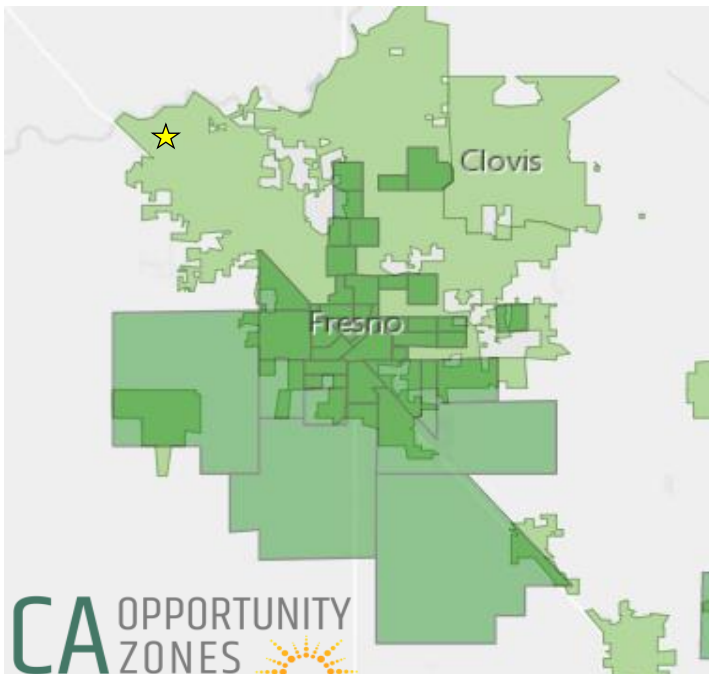


Figure 3 - Opportunity zones are represented by the dark green shading in the map above. The star represents the Veterans project area.

AGRICULTURAL AND MANUFACTURING TRANSPORT

SR-99 is important as a major lifeline route for industrial, commercial and agricultural purposes. SR-99 also serves as a major commuter route within and among cities located along its length. Throughout the project limits, SR-99 is a four-lane freeway with two mixed-flow lanes running in each direction. SR-99 has an Average Daily Traffic (ADT) volume of approximately 77,000 vehicles in the project area¹ and is designated a [Goods Movement Gateway](#), [Truck Network](#), [Farm to Market Corridor](#), [Major Freight Corridor](#) and [Priority Global Gateway](#). This project is also included on the State of California [shovel ready critical freight network project map](#).

There are hundreds of major producers and suppliers that utilize SR-99 to bring agricultural products to grocery shelves to feed the nation. Nationally known companies include: Producers Dairy, Foster Farms, Baloian Farms, Simonian Fruit Company, SunMaid Raisins, National Raisin Co, Bee Sweet Citrus, Wawona Frozen Foods, and Fig Garden Packing.

Herndon Avenue is an expressway running east-west through the city of Fresno for 10.6 miles. It has an ADT of more than 34,000 vehicles near the project area with approximately 12.4 million vehicles per year. Shaw Avenue is an arterial running east-west through the City of Fresno for 8.9 miles. It has an ADT of more than 10,000 vehicles in the project area, with approximately 3.6 million vehicles per year (Grantland to Polk). The [City of Fresno General Plan Land Use and Circulation Map](#) demonstrates that the area is home to a broad mix of land use including residential, commercial, public facilities, employment centers, mixed use facilities and open space. This creates an ideal area for economic investment and a dynamic hub of activity with multiple travel needs for freight, residents and business owners.

A number of companies including Amazon, Ulta and Gap, Inc. have located large regional and national distribution Centers in Fresno to take advantage of relatively inexpensive land and low cost labor, good access to the national rail and interstate highway networks, connections to major deep water ports in Oakland, Los Angeles, and Long Beach, and proximity to major consumer markets in Southern California and the San Francisco Bay Area. As a growing and diversified

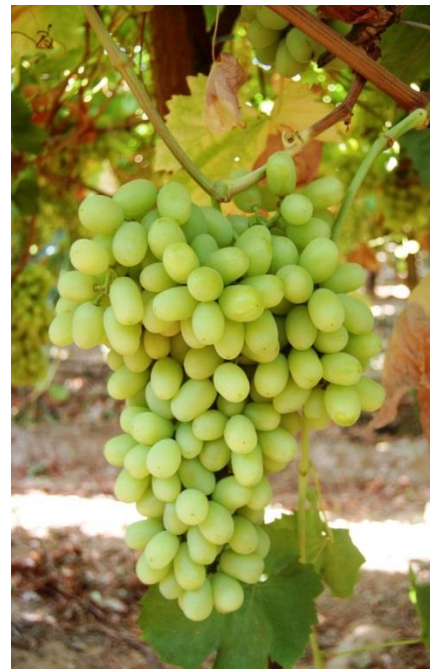


Figure 4 - Billions of dollars of agricultural commodities travel SR-99 to reach packing houses, commercial processors or ports along the coast.

¹ http://www.dot.ca.gov/trafficops/census/docs/2016_aadt_volumes.pdf

region, efficient goods movement is important to the long-term success of the economy. According to the [San Joaquin Valley Goods Movement Interregional Plan](#), in 2010, over 44% of the eight county region's employment (564,000 jobs) was provided by goods movement-dependent industries. That figure is expected to grow to upwards of 800,000 by 2040.

PROJECT HISTORY

The Fresno General Plan first introduced the concept for Veterans Boulevard in the mid-'80s. In the early 1990's, the City of Fresno and Caltrans prepared an initial Project Study Report (PSR) for the interchange with SR-99 (PSR #EA 06200-36190K). By 2009, a PSR for the interchange, railroad overcrossing, and connection to Golden State Boulevard was approved. The concepts outlined in the 2009 PSR remain unchanged and are intended to provide conceptual approval for alternatives including: no-build, minimum, base alternative and connector road impacts.



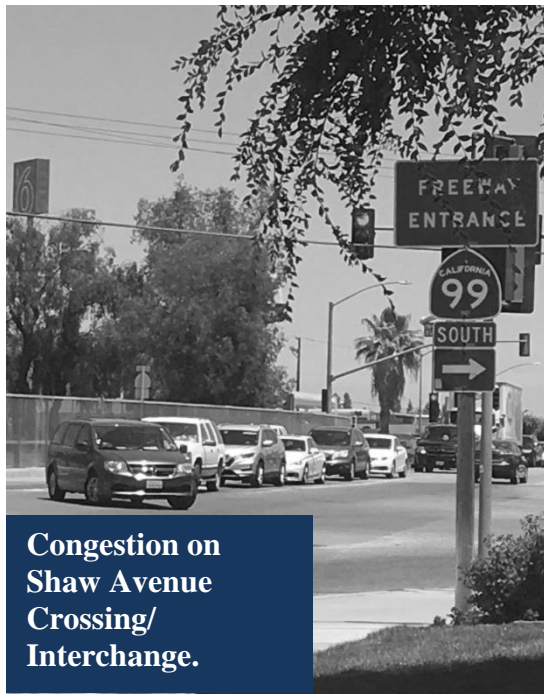
Figure 5 - Freeway System in California

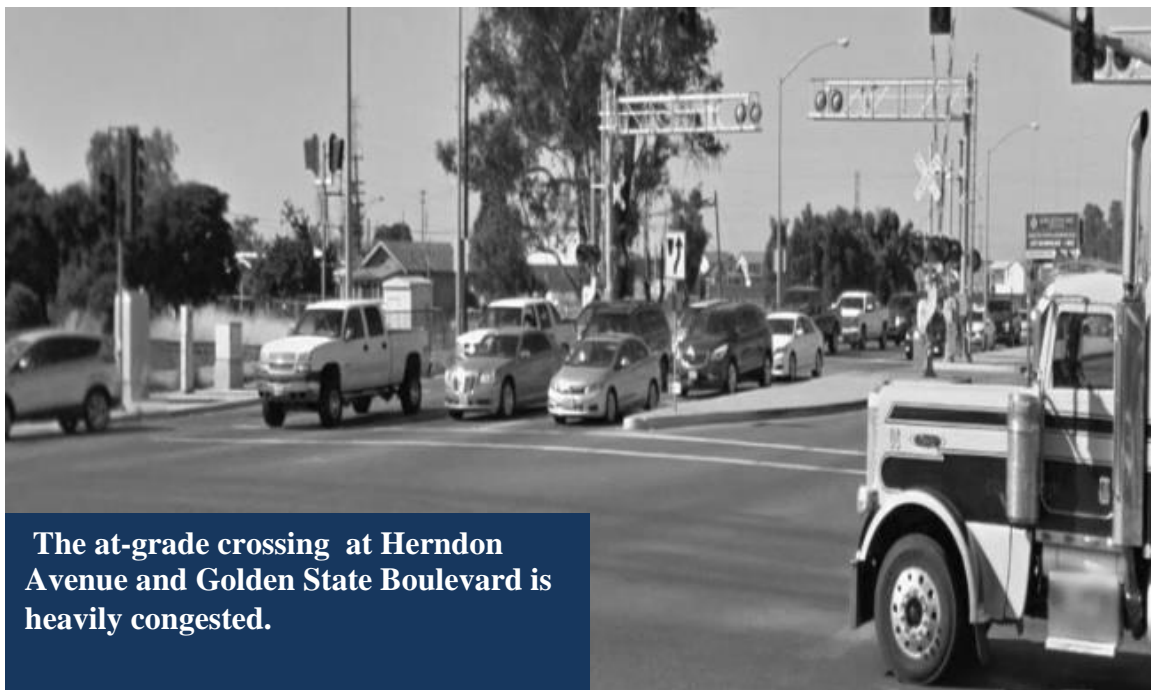
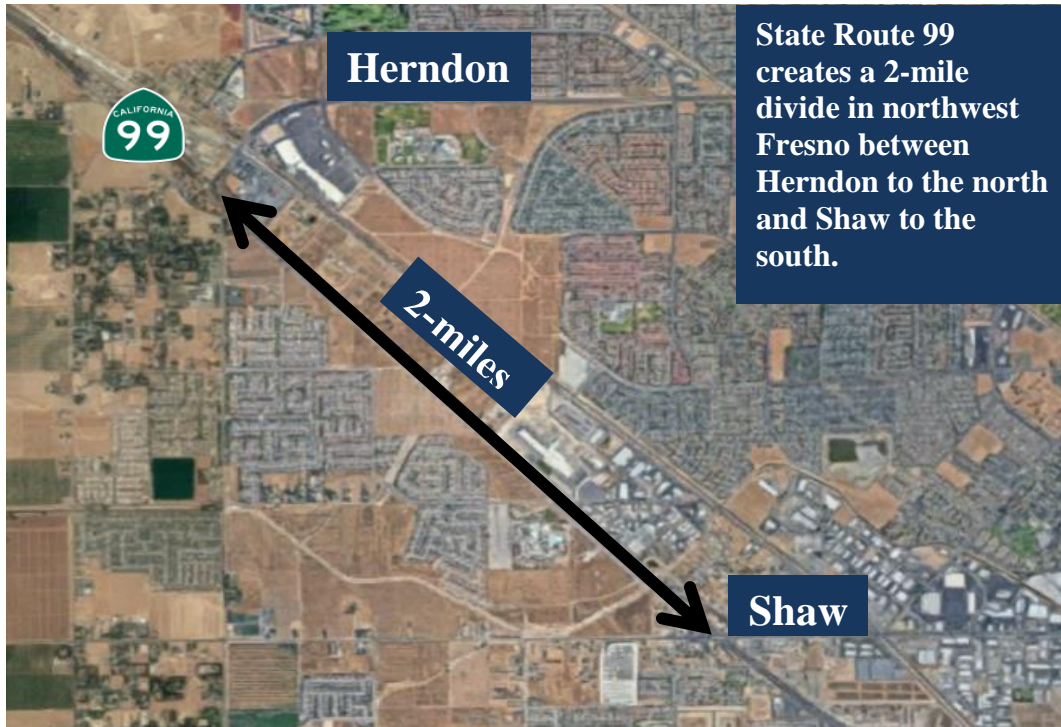
The project approval and environmental document (PA&ED) phase for the interchange and extension work also began in 2009. Another alternative was added at this time to accommodate the changing travel landscape through the area. In December 2011, the Fresno City Council approved the first amendment to the Cooperative Agreement with the Fresno County Transportation Authority (FCTA) for the Veterans Boulevard/State Route 99 Interchange and Grade Separation, Urban Project N-1. The amendment provided authorization from FCTA for \$8.8 million for the plans specifications & estimates (PS&E) or the final design phase. On July 19, 2012, the City Council approved a consultant services agreement with Mark Thomas and Company to complete PS&E for the Veterans Boulevard/State Route 99 Interchange and UPRR Grade Separation Project.

In 2013, Caltrans and the City of Fresno prepared a final [environmental impact report](#). A [project report](#) was published in July 2013. Right of way (ROW) acquisition also began at that time; it was substantially completed in early 2018. The project required a total of 38 parcels to be acquired for phases 1 through 5. Site control has been secured for all parcels. Based on the project schedule, ROW certification is expected to proceed well in advance of obligation deadlines. In 2018, the Veterans Boulevard interchange was added to the State Transportation Improvement Program [priority list](#) of highway needs.

TRANSPORTATION CHALLENGES ADDRESSED & EXISTING CONDITIONS

This project addresses several transportation challenges, including: [safety](#), [structural barriers to urban-rural connectivity](#), [congestion](#) and [travel efficiency](#). Each of the challenges are discussed at length in [Section II](#) of this application. The following images illustrate existing conditions and the challenges they pose to an efficient transportation system.





GRANT FUNDS, SOURCES AND USES OF ALL PROJECT FUNDING

PROJECT COSTS

The total project cost is \$138,548,686 to complete phases 1 through 5 in full. In alignment with the requirements outlined in the Notice of Funding Opportunity (NOFO), none of the previously incurred expenses are reflected in the funding analysis provided in Figures 5 and 6. **The total cost of future eligible project phases is \$77,934,765.** The City identified future funding commitments for phases 3, 4a, 4b and 5b totaling \$61 million. This funding will cover 90% of the cost to build the interchange (Phase 3) and 85.29% of the total future eligible costs. **BUILD funding totaling \$10.5 million will close the final funding gap, representing a 14.71% share of all future eligible costs.**

Figure 6 - Share of Future Eligible Costs		
Funding Type	Total	% share
Non-Federal	\$61,093,182	85.29%
Federal Other	\$0	0%
Federal BUILD	\$10,540,582	14.71%
Total:	\$71,663,764	100%

Figure 7 - Financial Summary Table	
Total Project Cost (including prior) used for Benefit-Cost Analysis:	\$138,825,686
Previously Incurred Expenses:	\$67,191,922
Future Eligible Costs, All Phases (3,4a,4b,5):	\$71,633,764
Total BUILD Request (Phases 3,4b):	\$10,540,582
Total BUILD Share of Future Eligible Costs:	14.71%

None of the previously incurred expenses are being used to satisfy cost share requirements. **The full financial analysis workbook is attached to the Grants.gov package.** It outlines total eligible costs by phase as well as any prior funds, future funds and the cash flow timeline. Funding restrictions are also indicated by funding source.

NON-FEDERAL FUNDING COMMITMENTS

Future non-federal funding for the project comes from a number of secure sources as outlined in the table below.

Figure 8 – Non-Federal Funding Summary Table	
State Transportation Improvement Program (STIP):	\$14,616,000
Measure C, a local transportation sales tax measure:	\$9,460,018
Regional Transportation Mitigation Fee:	\$30,021,000
City of Fresno Impact Fees:	\$4,823,164
State of California Local Partnership Program:	\$2,173,000
Total:	\$61,093,182

All funding commitment documents are available [here](#). The total cost estimate is based on planning, engineering studies, design and conceptual work completed to date. The City is confident in costing based on available data. Contingency levels are estimated at 10% based on engineering best practices and the level of design completed for the project. Funding is allocated to each phase based on funding restrictions.

FEDERAL FUNDING COMMITMENTS

The only Federal Funding that makes up the future eligible funding package is BUILD. No other Federal funding will be put toward the four remaining project phases. Matching funds for future eligible project costs are from local and state sources.



Figure 9 - Aerial of existing conditions. This project will remove structural barriers that divide residents and significantly limit

II. Selection Criteria

INNOVATION

INNOVATIVE TECHNOLOGIES

This project will install state-of-the-art ITS fiber-optic infrastructure and Adaptive Traffic Signal Control Technology (ASCT) system along Veterans Boulevard. ASCT is a best-practice identified by the Federal Highway Administration's Center for Accelerating Innovation. While real-time management of traffic systems is proven to work, these systems have been deployed on less than 1 percent of existing traffic signals nationwide.² The ASCT adaptive system will deploy fiber optic infrastructure for traffic signal interconnectivity with the Traffic Operations Center for real-time monitoring and continuous synchronization. Installing ASCT on this section of roadway will result in a 12.9-mile stretch of fully automated signals spanning Veterans Boulevard from Shaw Avenue to Herndon Avenue and Herndon Avenue from Golden State Boulevard to Willow Avenue. This will improve operational performance and safety. A citywide map of ITS infrastructure is available [here](#). **Travel times are forecasted to improve by a minimum of 18% as a result of expanding adaptive technology on Veterans Boulevard. The project is also projected to save a total of 813 tons of emissions over its useful life.**

² FHWA Center for Accelerating Innovation, 2017

INNOVATIVE PROJECT DELIVERY METHODS

The project uses two strategies from FHWA's Everyday Counts (EDC) Initiative to shorten and improve project delivery. The strategies include: [community connections](#) and [Smarter Workzone practices](#). The FHWA EDC [community connections](#) approach shaped the design of Veterans Boulevard. Transportation plays an important role in supporting community revitalization. As multimodal transportation systems connect Americans to employment, education, healthcare and other essential services, infrastructure investments create jobs and benefit businesses. Staff based project design on resident's feedback to incorporate and prioritize multimodal connectivity throughout Northwest Fresno. This project will create connections that improve travel time, travel options and safety for an area of town that has more than a 2-mile structural divide.

The design phase has included Smarter Workzone coordination, which will continue during construction. The concept involves coordinating any work occurring along the Herndon, Veterans, Shaw, Bullard and SR-99 corridors and across agencies with interests in the area. The aim is to minimize work zone impacts and the number of street cuts, manage traffic disruptions from road work with effective traffic control plans and produce high quality roads and public facilities.

In 2016, City staff examined SEP-15 and other innovative public-private partnerships (P3) to fund Veterans Boulevard. Materials provided by the Federal Department of Transportation's Center for Innovative Finance Support P3 toolkit were analyzed. Ideal project candidates for P3 arrangements include projects that collect tolls or fees to generate a revenue stream for private operators of public infrastructure. A fee-based system for Veterans Boulevard would not generate sufficient revenue to both cover the costs of the system and achieve an economic net benefit to interested private investors. Therefore, the City of Fresno has instead sought to leverage Federal funding by collaborating with public and private partners to share costs and coordinate project milestones.

ENVIRONMENTAL INNOVATION

Since 2007, Caltrans has performed federal responsibilities for environmental decisions and approvals under NEPA for highway projects in California that are funded by FHWA. These responsibilities have been assigned to Caltrans by FHWA pursuant [to two Memoranda of Understanding \(MOU\) signed by FHWA](#). **The streamlined environmental review process under U.S.C. 327 was used for Veterans Boulevard to improve efficiency.**

INNOVATIVE FINANCING

California's Senate Bill 1 (SB1), the Road Repair and Accountability Act of 2017, will invest \$54 billion over the next decade to fix roads, freeways and bridges in communities across California and puts more dollars toward transit and safety. California's state-maintained transportation infrastructure will receive roughly half of SB 1 revenue: \$26 billion. The other half will go to local roads, transit agencies and an expansion of the state's growing network of pedestrian and cycle routes. Each year, this new funding will be used to tackle deferred maintenance and safety needs both on the state highway system and the local road system and is restricted to transportation investments only. Funds are available through direct allocations, pass through grants and competitive grant programs. The City of Fresno is expected to receive a formula allocation of approximately \$8.5 million annually. The City

has obtained additional SB 1 funding through the Local Partnership grant program for phase 4a. This innovative financing has significantly increased transportation investment across the public works program, and helped fill a \$2.1 million gap in funding for this project.

The County of Fresno is one of 25 self-help counties in the state of California. Veterans Boulevard utilizes \$42 million in funding from the voter approved Measure C Sales Tax. In 1986, Fresno County voters passed Measure "C", a half-cent sales tax aimed at improving the overall quality of Fresno County's transportation system, including the County and all 15 cities within the County. In its first 20 years, Measure "C" delivered more than \$1 billion of improvements to state highways and county roadways, and has helped the building of additional lanes and freeway improvements throughout the County. As a result of the successful original measure, Fresno County voters chose to extend Measure "C" for an additional 20 years.

SAFETY

Veterans Boulevard will foster a safe multimodal transportation system for vehicles, pedestrians, cyclists, semi-truck goods transporters and rail commuters and rail freight transport. The lack of traffic capacity at the north Fresno/SR-99 ramps slows freight and commuter traffic and results in delayed response times for police, fire and paramedics. A lack of emergency pre-emption equipment on traffic signals in the project area means that emergency responders must navigate without the ability to adjust signal timing. Existing conditions for bicyclists and pedestrians are disjointed, making multimodal travel difficult throughout northwest Fresno corridors. Veterans Boulevard will bridge barriers and create vehicle and pedestrian accessibility for east-west travel through railway overcrossing, freeway interchange, roadway extensions, advanced congestion mitigating technologies and installation of a separated Class I trail.

Figure 10 – Safety Selection Criteria Summary

Safety Areas	Travel Modes Impacted	Expected Benefits
Fatality and Serious Injury Reduction	All Modes: Vehicle, Bicycles and Pedestrians	<ul style="list-style-type: none"> Collision costs reduced by \$341.9 million over 30 years.
Improved Roadway Interactions Through Innovative Design	Bicycle and Pedestrian	<ul style="list-style-type: none"> Daily increase of 117 hours of walking or biking. Bike/Pedestrian collision costs reduced by \$38.9 million over 30 years.
Raw Materials, Energy and Hazardous Spills	Semi-Truck Freight and Railroad	<ul style="list-style-type: none"> Decrease in hazardous spills through reduction of conflict zones.
Improved Safety Outcomes Through Technology	Vehicles	<ul style="list-style-type: none"> Up to 70% decrease in crash rates. Up to 25% decrease in emergency vehicle response times.

FATALITY AND SERIOUS INJURY REDUCTION

Enhancing bicyclist and pedestrian safety is critical in the City of Fresno. In 2017 and 2018 there were 50 pedestrian fatalities and nine cyclist fatalities citywide. As of May 2019, there have already been nine pedestrian fatalities and two cyclists killed citywide.

The recent incidents bring the total number of bicycle and pedestrian fatalities citywide in the last 2 ½ years to 70 deaths.

Following these tragedies, the community has prioritized investments to improve pedestrian and cyclist safety. Due to the high rate of pedestrian and bicyclist collisions citywide, the Federal Highway Administration (FHWA) selected the City of Fresno as a Pedestrian and Bicyclist focus city. Focus cities benefit from data analysis, technical assistance, safety training and access to information on countermeasures. In the project area on Ashlan, Shaw and Herndon, **there have been 18 bicycle and pedestrian crashes in the last seven years, including 7 fatal crashes.**

The project includes innovative trail design to reduce pedestrian-vehicle conflicts and provide a separated path of travel for non-motorized commuting. Installing trail facilities have been shown by the Federal Highway Safety Administration (FHWA) to produce up almost a 90% reduction in crashes involving pedestrians walking along roadways.³

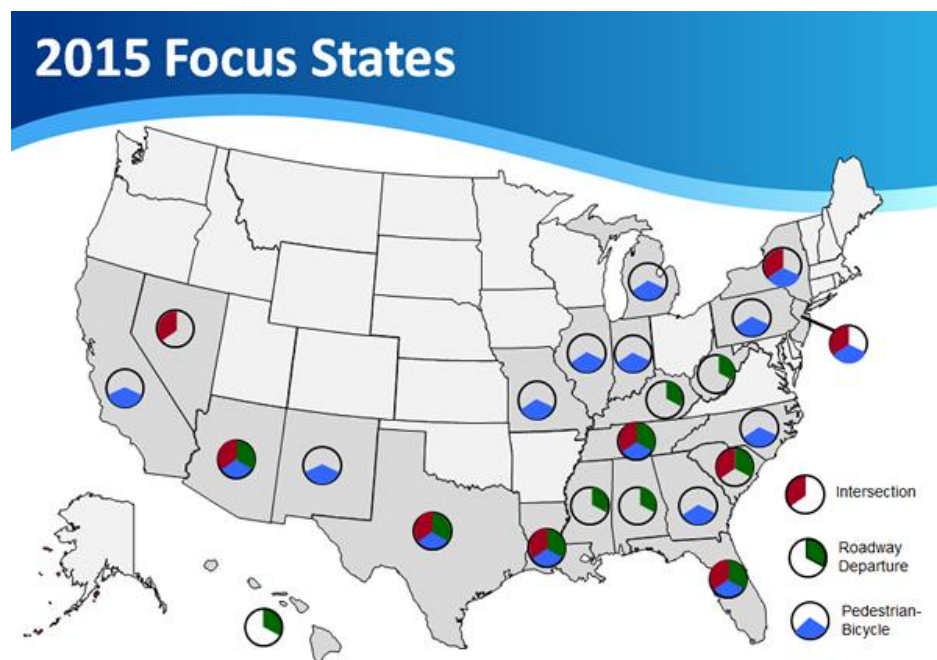


Figure 11 - The City of Fresno is a focus city as a result of higher than average fatalities.

³ FHWA Proven Safety Countermeasures, Walkways <https://safety.fhwa.dot.gov/provencountermeasures/walkways/>

In order to analyze the potential impacts of constructing Veterans Boulevard, staff reviewed pedestrian-train, vehicle-vehicle, vehicle-train and pedestrian-vehicle accidents citywide and in the immediate project area to determine collision patterns and safety needs. A data-driven approach helped calculate the safety impacts of this project. Data inputs included an analysis of the vehicle, bicycle, and pedestrian crashes on nearby roadways within the last 8 years as well as the injury frequency and severity.

There were 184 vehicle, bicycle and pedestrian crashes in the last eight years in the project area (see Benefit Cost Technical Report and Benefit Cost Workbook ‘collision summary tab’ for project area parameters) used to determine the safety benefits of reducing roadway conflicts as a result of constructing Veterans Boulevard. Of those collisions, 80 resulted in property damage only, eight were fatal, three resulted in severe injury, 25 included a visible injury and 68 resulted in a complaint of pain. Crashes were monetized based on severity and values provided in the California Benefit Cost Analysis tool. Only crashes that have corresponding crash modification factors tied to the safety improvements that will result from Veterans infrastructure were included in the analysis.

The results of the analysis indicate that Veterans Boulevard will improve roadway safety outcomes through its grade separation, a pedestrian trail, the latest roadway design standards and an adaptive intelligent transportation system with emergency vehicle preemption on traffic signals along the project. **The project will net safety improvements across all modes of travel. Collision/safety-related costs are expected to be reduced by \$341.9 million or approximately \$11.4 million per year over the next 30 years. This is the monetized equivalent of 35 fatalities or 744 collisions resulting in incapacitating injury.**

INNOVATIVE TRAIL DESIGN TO ADDRESS ROADWAY INTERACTIONS

The project includes a Class I trail that adjoins with the Herndon multipurpose trail, providing east-west connectivity. This infrastructure will make walking or biking to work a viable option for the thousands of residents living along these corridors, and helps improve air quality by reducing single occupant VMT. **Class II bike lane facilities along Veterans are expected to result in a daily increase of 117 hours of walking or biking.** Active transportation provides many health benefits, including strengthening the cardiovascular system. The County of Fresno has a higher rate of cardiovascular disease (6.8%) than the state of California average (5.9%), making facilities such as trails and bike lanes all the more vital to the community. **In the project area zip codes (93722 and 93723) approximately 1 in every 14 adult residents has heart disease.**

Trail facilities provide a separated/protected path of travel for non-motorized users, reducing the likelihood of fatal or serious injuries. Installing trail facilities are an essential countermeasure in this area, given the high number of pedestrian and bicycle crashes occurring in the City of Fresno. Between 2017 to 2019 there have been 70 pedestrian and bicyclist deaths citywide. Within the project area there were seven additional bicycle and pedestrian collisions examined (in addition to the 177 used for vehicle safety calculations) to determine the safety benefits of trail facilities.

Engineers have designed a more complex trail loop and undercrossing within the southbound cloverleaf to eliminate potential points of conflict between pedestrians and cyclists navigating the trail and vehicles navigating the SR-99 interchange. The design allows for the

trail to loop within the cloverleaf and cross underneath the southbound on- and off-ramps rather than crossing at-grade, eliminating conflicts between pedestrians/bicyclists and vehicles. Trail use is expected to be higher than average in this area due to the number of schools, residences, retail centers and employment centers in immediate proximity. A map of the trail (phase 5) is available [here](#). **Installing a trail is expected to result in \$38,954,660 in cost savings over the next 30 years as a result of fewer bicycle and pedestrian collisions.**

HIGHWAY/RAIL GRADE CROSSINGS

Along Herndon Avenue, seven lanes of traffic cross at grade. In 2016, the Department of Transportation counted 14 through-trains per day. Based on Department of Public Works 24-hour counts in September 2017, 1,909 trucks used the Herndon crossing per day, representing 10 percent of overall traffic, or nearly **700,000 trucks per year** in potential conflict with UPRR trains. The at-grade crossing at Carnegie is two lanes. Approximately 194 trucks use this crossing per day, representing 2 percent of overall traffic and more than **70,000 trucks per year** in potential conflict with UPRR trains. Designs for [phase 2](#) include constructing a grade separation over the UPRR and HSR lines for vehicle and pedestrian travel which will eliminate the Carnegie Avenue at-grade railroad crossing. Specifically, a portion of Carnegie Avenue from Bullard Avenue to Golden State Boulevard will be abandoned which reduces the conflict zone by eliminating an intersection and track crossing. Carnegie Avenue's remaining segment will be reduced to a local street standard from Bullard to provide a residential access point. This design reduces rail stop points and the likelihood of derailments. Veterans Boulevard will also provide an alternative travel route for trucks to avoid the Herndon at-grade crossing.

California prioritized pedestrian crossings by recommending proven safety countermeasures along with improvements to roadway and bikeway design and connectivity, to enhance bicycling safety. The [Caltrans State Safety Plan](#) recommends engineering features that reduce commercial vehicle-related crashes. Engineering features in the grade separation will reduce conflict points between commercial vehicles and other motorized and non-motorized traffic.

Citywide Train Fatalities

Railroad fatalities in the City of Fresno are reaching crisis proportions. A staggering 106 fatal train collisions have occurred citywide in the last 11 years. Citywide, in the first five months of 2019 there have been six fatalities involving the railroad.

In the last 11 years, there has been an average of nine people killed each year, with 2017 being the deadliest yet (16 fatalities).

Veterans Boulevard Train Fatalities

In the last 23 years there have been three fatalities and one non-injury accident at the Herndon crossing and along the railway at Bullard/Golden State. This results in an average annual train collision rate along the Herndon crossing area of .17. Given citywide safety trends, which place train fatalities at a rate of 9.63 per year, it's reasonable to expect fatalities to continue to climb without the grade separation benefits Veterans provides. **Installing a grade separation is expected to result in \$11.1 million in cost savings over the next 30 years.**

RAW MATERIALS, ENERGY & HAZARDOUS SPILLS

State Route 99 is designated as a [National Hazardous Materials Route](#) for transporting explosives through the project area. Common hazardous materials transported through the area include: gasoline, liquefied petroleum gas, diesel fuel, ammonia, sulfuric acid, petroleum crude oil, fireworks, sewage and agrochemicals like fertilizers and pesticides. Kinder Morgan operates a 78-acre terminal in Fresno with fuels including Military Jet Fuel, Ethanol and Biodiesel. Although pipelines deliver jet fuel to the [Lemoore Naval Air Station](#), the major roadways traveled for material transport include SR-99 and Central Avenue. Valley Pacific Fuel also operates south of Veterans Boulevard, along SR- 99. They provide diesel, gasoline, lubricants, greases and farm fuel deliveries transported by truck throughout California by way of SR-99.

According to the California Governor's Office of Emergency Services⁴, there have been 37 hazardous spills in the City of Fresno since 2008. By reducing the number of at-grade rail crossings and improving congestion through the interchange, roadway extensions, and adaptive intelligent transportation equipment, the likelihood of collisions is reduced. Since hazardous materials move through the area, these improvements reduce the likelihood of collisions involving the unintended release of hazardous materials.

IMPROVED SAFETY OUTCOMES

In a no-build scenario, traffic would continue to cross at Carnegie, facing delays and potentially derailments and collisions. This project aligns with the [State of California's 2015-2019 Strategic Highway Safety Plan](#) by supporting emergency medical response times, as well as pedestrian and bicyclist safety and commercial vehicle collision reduction. This proposal has also incorporated strategies to improve transport time or "time to care" for emergency medical services.

Upon project completion, interactions are expected to improve as more trucks, vehicles and pedestrians use the new roadway and interchange instead of taking Herndon, Shaw or other connectors. Veterans Boulevard will have advanced safety features including Adaptive Signal Control Technology and traffic signals outfitted with emergency vehicle preemption equipment. Traffic signal preemption features installed on new signals will allow emergency vehicles to receive more green time and reduce the likelihood of intersection collisions. Congestion reduction resulting from the new interchange and roadway extensions will reduce delays in response



Figure 12 - Traffic signal preemption equipment improves emergency vehicle response times.

⁴ California Office of Emergency Services, HazMat Spill Notifications Database, <https://www.caloes.ca.gov/cal-oes-divisions/fire-rescue/hazardous-materials/spill-release-reporting>

times. These benefits will extend to other emergency responders including police and fire. **The preemption equipment decreasing intersection crash rates by as much as 70%, preventing injuries, and improving response times by as much as 25%.⁵**

Carnegie will no longer provide a rail crossing. This change, along with shifting travel patterns along a grade-separated Veterans Boulevard will reduce train-vehicle, train-pedestrian and vehicle-pedestrian conflicts in northwest Fresno. Given local collision patterns, it is reasonable to project a safety cost savings of \$11.1 million over the next 30 years when factoring the economic costs of historical collisions and fatalities (7% discount rate). See the Benefit Cost Analysis workbook for more information.

STATE OF GOOD REPAIR

A no-build scenario will perpetuate structural barriers and barriers to opportunity between Fresno and rural neighbors to the west. It will also reduce the efficiency of traffic flow through the area. As one of the largest economic engines in the Central Valley, access to employment opportunities in Fresno are vital to economic prosperity. A no-build scenario threatens future transportation network efficiency, the mobility of goods along State Route 99 and mobility options for residents. Investment in the area will support thriving commerce and foster economic growth. In fact, the [Specific Plan of the West Area's](#) guiding principles call for encouraging development of civic, parkland, retail and commercial, mixed-use, and multi-family uses along West Shaw Avenue, West Ashlan Avenue, Veterans Boulevard, West Shields Avenue, West Clinton Avenue, and Blythe Avenue.

STRUCTURAL BARRIERS TO URBAN – RURAL CONNECTIVITY

The Veterans Boulevard Interchange and Corridor Improvement Project addresses structural barriers, congestion, safety and multimodal connectivity challenges both within the City of Fresno and between adjacent rural communities (See figure 10). Rural communities west of the project include: Biola, Kerman, Ripperdan, Firebaugh, Mendota, Tranquility and San Joaquin. Many of the communities have grown around jobs in the agricultural industry, which are often temporary with seasonal unemployment. Sixty to ninety percent of residents in these communities identify as Hispanic.

Presently, freeway access ramps are located two miles apart at Herndon Avenue and Shaw Avenue. This design creates a structural barrier or ‘great divide’ that limits east-west multimodal travel options and limits rural, largely low-income neighbors in disadvantaged communities from traveling into the City for commerce, services, employment, economic and educational opportunities. Census tracts in these cities have some of the [lowest rates of educational attainment](#) and [highest rates of unemployment](#) in the state of California. For example: unemployment in Biola (Census Tract 6019004100) is higher than 80% of the census tracts in California, while the percent of adults without a high school education in east Kerman (census tract 6019004002) is higher than 96% of the census tracts in California. The median household income in the city of Tranquility is \$29,792, significantly lower than the city of Fresno (\$41,455) and the state of California (\$71,805). Transportation access to employment and educational opportunities in Fresno is critical for west area communities.

⁵ Global Traffic Technologies, Opticom Emergency Response data, <https://www.gtt.com/opticom-emergency-response/>

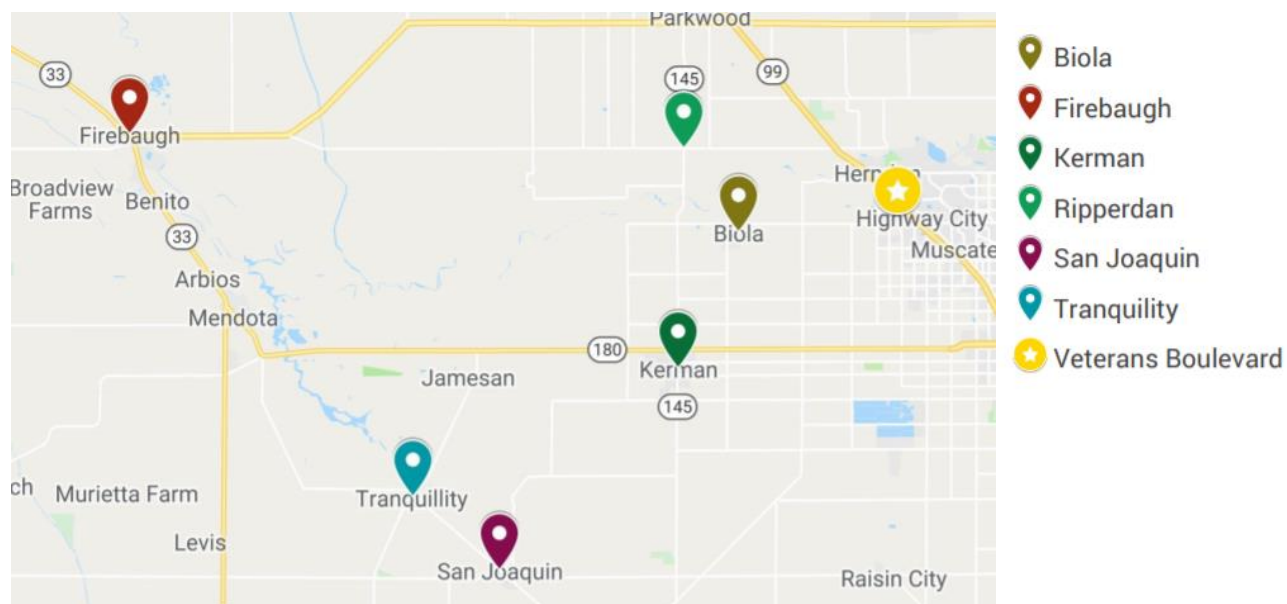


Figure 13 - Neighboring rural communities will benefit from connectivity improvements.

TRANSPORTATION RESILIENCE AND LIFECYCLE COSTS

The project helps maintain the highway system in a state of good repair by shifting travel patterns from Herndon and Shaw over to Veterans Boulevard interchange. This will reduce strain on existing infrastructure, prolonging the useful life of the assets. If left unimproved, the Shaw and Herndon interchanges will continue to experience overload and reduced pavement performance.

The City of Fresno and Caltrans will be responsible for the project's life-cycle costs. The City of Fresno will be responsible for Phases 1, 2, and 4-5. The benefit cost analysis tool estimates the average annual operations and maintenance (O&M) for Veterans Boulevard at \$913,716 over its useful life. Future budget cycles will include funding as the project completes construction and becomes operational. Secure state funding sources for maintenance include the Road Maintenance and Rehabilitation Account (RMRA) funds, of which Fresno receives approximately \$8 million per year. The City of Fresno has also signed a [construction and maintenance agreement](#) with the Union Pacific Railroad for the grade separation structure.

Community Facilities District (CFD) funding will cover trail maintenance, landscaping and irrigation (phase 5). CFD funding is a condition of home development in the area and utilizes fees from property tax to provide maintenance, landscaping and irrigation. Caltrans will assume responsibility for O&M on the SR-99 Interchange constructed as part of phase 3 as specified in the [2012 Cooperative Agreement](#) with the City of Fresno. The City of Fresno has also signed a [construction and maintenance agreement](#) with the Union Pacific Railroad for the grade separation structure.

Enacting legislation and policies for road maintenance and rehabilitation account and community facilities district funds do not allow for diversion of these funds to other expenses. This protection ensures continuous funds for operations and maintenance of roads, trails and public facilities. These methods insure infrastructure remains in a state of good repair throughout its useful life.

ECONOMIC COMPETITIVENESS

CONGESTION, GOODS MOVEMENT & TRAVEL EFFICIENCY

Freight and commuter traffic overwhelms existing infrastructure. Transportation tops residents' main complaints in northwest Fresno - particularly the difficulty of trying to cross SR-99 to reach retailers, employers and schools in the area. There are five Central Unified schools that are located along Veterans Boulevard include: Rio Vista Middle School, River Bluff Elementary, Liddell Elementary, Saroyan Elementary and Herndon-Barstow Elementary School. Combined, the schools serve 3,759 children. In a no-build scenario, thousands of school children continue to be stuck in buses and vehicles that get caught in the queue for light rotation after light rotation. The Superintendent of Central Unified School District recognizes the travel time savings and mobility options Veterans Boulevard provides for families in his district, and has provided a [letter of support](#) for the project.



Figure 14 - A school bus is choked through a narrow undercrossing at Herndon and SR-99. Veterans Boulevard will provide an alternative route for traffic.

Travel models indicate that State Route 99 will continue to be a major access route for regional destinations. Without the proposed Veterans Boulevard interchange project (no-build alternative), levels of service for the Herndon and Shaw interchanges would decline to worse than unacceptable levels resulting in excessive delays and poor traffic operations on SR-99⁶. The [2013 Project Report](#) estimates a decrease in delay times on Shaw Avenue by up to 92%. The Herndon and Shaw Avenue intersections near SR-99 ramps will operate at LOS F by 2035 under the no-build condition. To accommodate regional freight demand, local and area-wide roadway infrastructure must be able to support existing and increasing traffic.

This project supports the efficient movement of freight and people by making connections to a critical segment of the nation's freight network along SR-99. Land use forecasting indicates that population growth countywide will continue to increase at an average rate of .989 percent per year, increasing the total city population roughly 21 percent by 2042 (California Department of Finance 2016)⁷. As the city grows, demand for freight transportation improvements will only increase. This is compounded by the fact that the San Joaquin Valley's economy is reliant on goods movement industries including: agriculture, mining, manufacturing, construction, trade and warehousing.

According to Department of Labor data, in 2019 seventy thousand jobs in the City of Fresno were tied to the trade, transportation and utilities industries.

As the figure below demonstrates, job growth in this sector has continued an upward trend over the last ten years. In order to remain regionally, nationally and globally competitive in Fresno's expanding agricultural and transportation markets, investment in infrastructure is essential.

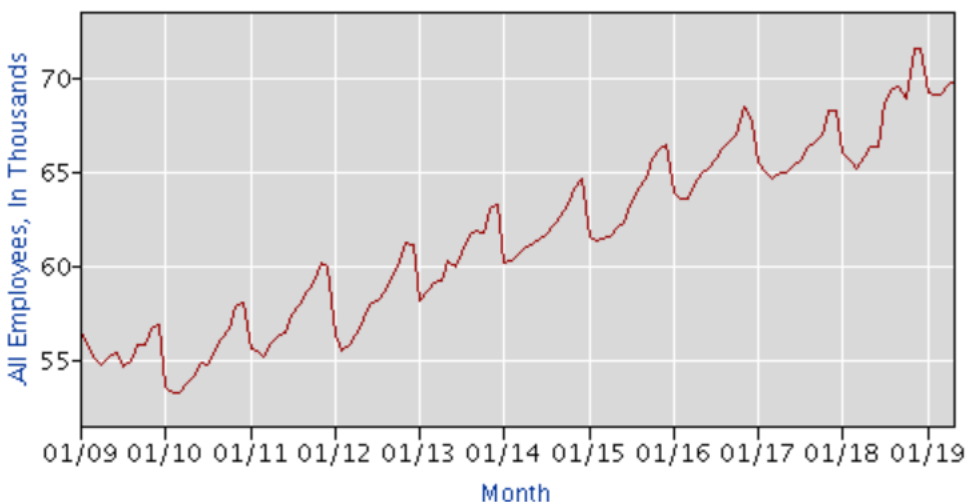


Figure 15 - Trade, transportation and utilities jobs in Fresno, CA (Department of Labor)

⁶ Project Report, 2013, p.37

⁷ California Department of Finance, County Population Projections, 2016, dof.ca.gov

TRAVEL TIME COSTS REDUCTION

Innovative technologies will synchronize traffic signals along Veterans Boulevard and at the interchange. Since Veterans Boulevard is not yet built, the projected travel time improvements cannot be compared to a baseline value on Veterans Boulevard. Projections are instead compared to a build scenario in which adaptive signal control technologies were not used.

The benefit cost analysis calculator estimates 15 million hours of time saved over the life of the project (30 years).

Typically with traffic synchronization along congested corridors, projects can expect an 18 percent improvement in travel times. However, after the City of Fresno's Shaw Avenue corridor adaptive and synchronization project was deployed from Fresno Street to Chestnut Avenue, travel time studies indicated a 23 percent improvement during AM peak hours and 31 percent improvement for PM peak hours. Overall, Shaw Avenue corridor complaints were reduced by 29 percent. While the forecast for expanding adaptive technology on Veterans Boulevard is an 18% improvement in travel times for the corridor (compared to a build scenario that does not include adaptive signal control technology), though a range of 23%-31% improvement in travel times and a reduction in corridor incidents due to a reduced number of stops is possible.

Traffic volumes in northwest Fresno expand and contract depending on the time of day. Travel reliability is a direct benefit to residents, because time spent in traffic is time wasted. Every hour spent in traffic ranges in value from \$14.20 for personal travel to \$28.60 for truck travel. Every minute of truck delay costs businesses 48-cents.

An estimated 770,000 trucks travel across Herndon and Carnegie at-grade rail crossings per year. The occurrence of a single one-minute delay per truck over the course of a year equates to \$369,600 in lost revenues.

Veterans Boulevard provides an alternate route with less delay. By enhancing the transportation system along these routes, travelers and goods will benefit from travel efficiencies. Equipment that minimizes congestion will result in less user frustration and delay, move goods to market and remove traffic concerns that create a barrier to additional economic investment in the area. **The estimated value of time saved as a result of this project is nearly \$2 million per year.**

LOW TO NO-COST TRAVEL OPTIONS

Installing a separated trail facility will provide travelers the option to use non-motorized forms of travel. Rather than investing in vehicle travel, residents can travel by foot or bike to their destinations. Active travel is relatively inexpensive compared to the costs associated with a vehicle purchase, loan or lease, fuel, maintenance and insurance. Affordable mobility is critical in this community as one in six residents in the Census tracts impacted by the

project⁸ receive food stamps, and an average of 37% of households make less than \$50,000 per year (compared to California's Median Household income of \$71,805).

ECONOMIC DEVELOPMENT AND BARRIER REDUCTION

Support for Existing and Future Development

There are more than 3,200 acres of vacant or underused land near the project. At ultimate industrial area build-out (north of Barstow), the project area has capacity to accommodate private employers who would create approximately 8,545 jobs. These jobs would generate a minimum of \$266 million per year in wages. Veterans Boulevard encourages this development by providing essential transportation connections through the area. To attract these investments, the City of Fresno offers developers of industrial or large office developments an [impact fee elimination or reduction program](#) based on the number of jobs created.

Elimination of a Two-Mile Divide / Rural Connections

SR-99 divides the east and west sides of town for 2.3 miles, separating rural workers from employment opportunities. Veterans Boulevard bridges the barrier, opening up greater access to the National Highway Freight System via State Route 99, and providing better circulation to roads near the interchange through a more direct route and less congestion. The corridor approach incorporates improvements on a broad scale to ensure that the entire transportation system in northwest Fresno gets people to work and goods to their destinations much more efficiently.

Job Creation

The Federal investment in Veterans will result in more jobs and apprenticeships. To estimate job creation under the American Recovery and Reinvestment Act (ARRA), the White House provided this formula for job years:

- \$92,000 of government spending creates one job year (full time, 40/hour weeks)
- 64 percent of the job years represent direct and indirect effects
- 36 percent of the job years are induced effect⁹

Direct jobs are the job-years created in the actual government-sponsored project. Indirect jobs are the job-years created by suppliers who make the project materials. Induced jobs are the job-years created elsewhere in the economy as increases in income from the direct government spending lead to additional increases in spending by workers and firms.

When applied to the Federal share of Veterans construction (\$10,540,582 million), the Federal investment in the project will result in:

- 114.5 job years
- 73.28 job years will be direct and indirect
- 41.22 job years will be induced

⁸ Census Tracts: 6019004207, 6019004215, and 6019004212

⁹ American Recovery and Reinvestment Act, 2009

Based on the California Department of Transportation’s federal trainee guidance, the total project will also result in training for a minimum of 16 apprentices in skilled crafts. The training will equip apprentices to pursue long-term employment in their fields.

OPPORTUNITY ZONES

See [discussion of Opportunity Zones](#) on page 3.

ENVIRONMENTAL SUSTAINABILITY

Energy Use, Air and Water Pollution Reduction and Stormwater Mitigation

Energy efficient design features have been incorporated into the project. The lighting that will be used along the roadway extensions, trail and interchange will be LED lighting. LED lighting is estimated to use on average 50% less energy than traditional high pressure sodium fixtures. **According to the benefit cost analysis, emissions will be reduced by a net total of 813 tons over the life of the project.** This project increases roadway capacity, but balances the impacts of the increase by incorporating facilities for alternative modes of travel. Non-motorized travel has been shown to positive impact air quality. Without this project, multimodal travel is infeasible due to a lack of separated facilities connecting north routes along Herndon Avenue to Shaw Avenue to the south. It is expected that this project will result in an increase of 117 hours of bicycle and pedestrian travel per day, resulting in over half a million hours of non-motorized travel over the life of the project. During construction, runoff control measures will be taken to mitigate water pollution. The project is designed to include a landscaped buffer along the trail which will provide a permeable surface for storm water recharge.

QUALITY OF LIFE

Over the years, residents have grown increasingly frustrated with the lack of connectivity in their area, going as far as referring to their neighborhoods as “[Forgotten Fresno](#).” Quality of life will be improved by fewer idling vehicles, improved connectivity to jobs, goods and services, shorter bus routes, more efficient public transit operations, improved emergency vehicle response, fewer structural barriers and more facilities for active transportation. Quality of life cannot be monetized with available BCA tools, but was communicated as a major concern for residents (see section III, Public Engagement). This project will expand transportation choices, open access to essential services and create improved connectivity for communities that have been structurally cut off from employment opportunities, quality health care services and other critical destinations.

PARTNERSHIP

The City of Fresno has and will continue to leverage federal funding by collaborating with ten public and private partners to share costs and coordinate project milestones. Cost sharing and coordination will result in a net cost savings for all partners from economies of scale and eliminating duplicative efforts. For example, coordination with partners to raise a PG&E distribution line has resulted in a cost savings of more than a half million dollars. Other partners include: Caltrans, the High Speed Rail Authority, AT&T, Union Pacific Railroad, Fresno County Transportation Authority, Fresno Council of Governments, and private developers including [Granville Homes](#), [Gryphon Capital](#) and the [Assemi Group](#).

PUBLIC PARTNERS

Each partner contributes to the project's overall success. The California Department of Transportation (Caltrans) completed the environmental impact report and will be a key partner on the interchange (phase 3). The Cooperative Agreement between Caltrans and the City of Fresno is available [here](#). Fresno Council of Governments and the Fresno County Transportation Authority have worked tirelessly with the City to secure local and state funding for the project.

The California High Speed Rail Authority (CHSRA) is funding construction for phase 1 and 2 of the project as well as realigning Golden State Boulevard to its ultimate location. In November 2016, the City Council approved a [cooperative agreement](#) amendment with CHSRA for \$28 million to fund the construction of a new overpass over the high-speed rail alignment and the Union Pacific Rail Road tracks at Veterans Boulevard. Phase 1 began construction in 2018. Phase 2 is expected to begin construction in late 2019.

PRIVATE PARTNERS

Private developers, who vocally support the project's goals to improve freight traffic flow and relieve congestion, have agreed to be assessed development fees to help fund the project. Simultaneously, PG&E and AT&T have utility interests in the area and are coordinating with the City of Fresno and CHSRA to realign utilities to accommodate Veterans infrastructure according to the schedule of work.

OTHER STAKEHOLDERS

More than 300 residents have attended community meetings to request Veterans Boulevard be constructed and receive project status updates. The Central Unified School District is highly supportive of the project and has provided a [letter of support](#). Public engagement efforts and support for the project are discussed [here](#).

III. Project Readiness

TECHNICAL FEASIBILITY

The original project design was developed in the Project Approval-Environmental Document (PA-ED) phase to include: a type L-9 interchange connecting Veterans Boulevard to State Route 99; a Veterans Boulevard overcrossing of Golden State Boulevard (with connecting "jug handle ramps"); a second overcrossing over the Union Pacific Railroad (UPRR) tracks, and extensions of Veterans Boulevard to Shaw Avenue and to Herndon Avenues. The original project also accommodated future planned roadway connections and realigning a portion of Herndon Avenue to connect with Veterans Boulevard. Subsequent to the PA-ED phase, the City of Fresno partnered with the California High Speed Rail Authority (CHSRA) to extend the bridge structure over the UPRR tracks to accommodate the new CHSRA tracks.

The project design connects Veterans Boulevard via "jug handle" shaped ramps to Golden State Boulevard. This alternative re-aligns Golden State Boulevard to the west and provides a structure over Golden State Boulevard for the Veterans Boulevard traffic. The single-span structure over the proposed Golden State alignment includes a span of 75'-9" along the Veterans Boulevard alignment. This provides a minimum vertical clearance of 16'-1" over the roadway section, which exceeds the required 15'-0" per Highway Design Manual Table

309.2A. It is a cast-in-place, post-tensioned concrete box girder with an overall section width of 136'-10".

Two at-grade signalized intersections were added at the jug-handle ramps intersections with Golden State Boulevard. From these intersections, the "J1" ramp (approximately 925 feet in length), located to the south of Veterans Boulevard, and the "J2" ramp (approximately 1,115 feet in length), located to the north of Veterans Boulevard, ramp up to connect to the proposed Veterans Boulevard. Both the "J1" and "J2" ramps are two-way, two-lane ramps that provide right-in/right-out movements to and from Veterans Boulevard. The notable difference between the "J1" and "J2" ramps is that the "J2" ramp has a standard 10' sidewalk section whereas the "J1" ramp does not provide pedestrian access.

The structure over the UPRR and CHSRA tracks will be a two span structure with a total span of 295'. From east to west, the span lengths are 115' and 180' respectively. The structure's support column is located just outside the UPRR operational right-of-way. This structure also has a minimum vertical clearance of 23'4" over the existing UPRR railroad tracks, which meets the requirements set forth in Table 309.5A of the Highway Design Manual.

Within the limits of the Veterans Boulevard Project, the CHSRA alignment is planned along the west side of the existing UPRR right-of-way. The CHSRA right-of-way width is 107' and is adjacent to the existing UPRR tracks. Golden State Boulevard will be realigned to the west to accommodate the CHSRA track alignment. The planned CHSRA profile is at-grade and will be slightly lower than the existing UPRR tracks at the Veterans Boulevard crossing. The CHSRA will provide construction funding for the grade separation over the UPRR and CHSRA tracks, realigning Golden State Boulevard, the "J1" connection between Veterans Boulevard and Golden State Boulevard, and the reconstruction of Carnegie Avenue to eliminate the existing at-grade UPRR crossing. Additional project impacts and costs resulting from the CHSRA are captured by the CHSRA project.

The corridor along Veterans Boulevard also contains a 12'-wide Class I trail. This trail was designed to improve pedestrian and bicycle safety and mobility throughout the corridor. The 12'-wide trail runs from Herndon Avenue to Shaw Avenue on the north side of Veterans Boulevard. The trail alignment loops and ramps down with the southbound loop on-ramp (which has the heaviest ramp traffic volume) to improve safety. It travels under the southbound loop on-ramp and diagonal off-ramp and connects to an existing section of the Class I trail approximately 550' west of the proposed undercrossing. The minimum vertical clearance for this trail is 10'.



Figure 16 - Work is already underway on Phase 1 of the project.

Overall project work was split into the following design and construction phases to accommodate scheduled utility relocations, expedite existing funding, and to create appropriately scaled opportunities for local contractors to participate in the construction work:

Phase 1 – Phase 1 includes extending Bullard Avenue to Veterans Boulevard and storm drain improvements.

Phase 2 – Phase 2 includes the UPRR and CHSRA grade separation; the southerly jug handle (“J1” as identified subsequently) connecting Veterans Boulevard and Golden State Boulevard; reconstructing Carnegie Avenue to eliminate an at-grade UPRR crossing and; embankment and partial street improvements between the Veterans Boulevard/Bullard Avenue/Riverside Drive intersection and the UPRR/CHSRA grade separation.

Phase 3 – Phase 3 includes: the Veterans Boulevard/State Route 99 interchange; the northerly jug handle (“J2” as identified subsequently); Veterans Boulevard overcrossing of Golden State Boulevard, and; completing Veterans Boulevard between the Veterans Boulevard/Bullard Avenue/Riverside Drive intersection and the Veterans Boulevard/Bryan Avenue/Barstow Avenue intersection.

Phase 4 – Phase 4 includes Veterans Boulevard extensions to existing corridors. To maximize state funding, the project has been split into two phases. Phase 4A includes connections from the Bryan Avenue/Barstow Avenue intersection to Shaw Avenue. Phase 4B consists of connections from Riverside to Herndon, including the extension of Sierra Avenue to Bullard Avenue; modifications to Hayes Avenue between Herndon Avenue and Veterans Boulevard, and; improvements to access between Veterans Boulevard and Herndon Avenue.

Phase 5 – Phase 5 includes the Class I trail improvements along the project’s entirety. The phase has been split into two sub-phases: 5a and 5b. Phase 5a runs from Herndon to Hayes and is expected to begin construction in September 2019. Phase 5b runs from Hayes to Shaw and will be constructed along with phases 3 and 4.

Plans for the interchange (phase 3) have been designed following current American Association for State and Highway Transportation Officials (AASHTO) Load and Resistance Factor Design (LRFD) 6th edition standards and were informed by a detailed [project study report](#). Roadway, overcrossing and multipurpose trail plans have been developed using City of Fresno [standards, plans and specifications](#). In addition to the design standards referenced above, the following design standards have also been applied to the project: Caltrans Highway Design Manual, Caltrans Standard Plans and Specifications, and American with Disabilities Act (ADA) requirements, and ITS standards. **A simulation video highlighting the design of the interchange is available [here](#).**

PROJECT SCHEDULE

A detailed project schedule demonstrating the ability to meet threshold requirements to advance expeditiously to construction is provided in Figure 13 and was submitted as an attachment in Grants.gov. All real property and right-of-way acquisition will be completed in accordance with 49 CFR part 24, 23 CFR part 710 and other applicable legal requirements. Remaining required approvals from Caltrans have been factored into the schedule and will

not result in any delay in project delivery. As demonstrated in the detailed project schedule, all necessary activities will be complete to allow BUILD Transportation grant funds to be obligated well in advance of the statutory deadline. A summary of the construction schedule is listed in Figure 14 by phase. Site control has been achieved for all right of way, including [easements with the Union Pacific Railroad](#).

Figure 17 - Construction Schedule		
Phase	Construction Start	Construction End
Phase 1	Nov 2019	Aug 2019
Phase 2	Oct 2019	Mar 2021
Phase 3	Jan 2021	Feb 2023
Phase 4a	Apr 2020	May 2021
Phase 4b	Jan 2021	Feb 2023
Phase 5a	Aug 2019	Aug 2019
Phase 5b	Apr 2020	Feb 2023

POTENTIAL RISKS AND MITIGATION STRATEGIES

The City of Fresno has completed a risk analysis to determine the greatest possible risks to completing the project and mitigation strategies. The three potential risks discussed below emerged during the analysis and are listed in order of potential risk severity. Mitigation strategies have also been identified for all three risks.

POTENTIAL RISK 1: RELATED WORK IN THE PROJECT AREA

The Veterans Boulevard project has been designed to maintain independent utility. However, related work in the project area is ongoing and introduces the greatest risk potential. A PG&E distribution pole line runs along a north/south alignment (paralleling SR-99) approximately half way between SR-99 and Golden State Boulevard. To best provide adequate vertical clearance over the elevated Veterans Boulevard associated with phase 3, and horizontal/vertical clearance for the new Golden State Boulevard (to be constructed by CHSRA), the existing pole locations must be moved and replaced with taller utility poles. High priority AT&T lines run north/south between and paralleling Golden State Boulevard and Union Pacific Railroad (UPRR) tracks. These lines conflict with the center support structure (bents) of the UPRR/CHSRA grade separation structure associated with phase 2. CHSRA and AT&T are working jointly to realign these facilities to the new Golden State Boulevard alignment, alleviating the conflict with the phase 2 structure.

Mitigation Strategy: Scheduling delays to AT&T's work could have a potential negative impact on the phase 3 construction, if they are substantial. To alleviate this potential delay, in September 2017 the City performed field surveys of the excavated and exposed facilities in question and has determined that the existing facilities can be temporarily moved laterally away from the bents which will mitigate any potential delay on phase 2 construction. Should the relocation of the AT&T facilities relocation into the new Golden State Boulevard alignment be delayed, the City has a "shelf-ready" option to prevent negative impacts to the phase 2 or phase 3 construction. If Golden State is not realigned prior to the start of phase 3 construction, existing Golden State will be maintained under the grade separation and

Carnegie will be left open. The City is highly experienced with managing complex project scheduling and management, and can mitigate any potential risks to achieving project milestones by remaining flexible and responsive to any changes in the project area. Regular meetings are held with both CHSRA and PG&E to communicate project status and collectively navigate any challenges.

POTENTIAL RISK 2: COST CONTROL

With an overall construction cost exceeding \$100 million, cost control is a potential risk that requires proactive and ongoing cost management.

Mitigation Strategy: Project phasing manages costs through increased competition, dispersion of liability and interagency project coordination to achieve mutual benefits. Coordination with other stakeholders will continue throughout the life of the project to maximize cost savings. To date, it is estimated that coordinated efforts have saved half a million dollars. The City of Fresno has successfully demonstrated cost containment with many Federal projects, including a 2013 TIGER award for \$15.9 million for the [Fulton Mall Reconstruction](#) Project which has remained on-time and on-budget.

POTENTIAL RISK 3: PROCUREMENT DELAYS

Due to the increase in statewide and local construction as a result of increased transportation funding, soil is in short supply in the immediate area. Soils are needed to support embankment construction. It is anticipated that costs for soil may be slightly elevated as a direct result of local competition.

Mitigation Strategy: The budget estimate and contingency reflect minor cost increases to account for this. No other procurement delays are foreseen at this time. The project phasing strategy has also helped ensure adequate workforce and material availability to mitigate delays.

REQUIRED APPROVALS

ENVIRONMENTAL PERMITS

The State of California Department of Transportation in June 2013 issued its Final Environmental Impact Report (EIR)/ Environmental Assessment with a Finding of “No Significant Impact.” This EIR covers both Federal NEPA and State CEQA requirements for phases 1 through 5 of the project. The full report is available [here](#). Although the EIR is more than three years old, the project remains consistent with City and Caltrans planning documents and includes language that calls for preconstruction surveys as the project moves forward. Caltrans will revalidate NEPA once a request for authorization is submitted for construction funding. The time allotted for completing the environmental phase will in no way delay the project; please see the project schedule (Figure 9) for details. The delay in moving from the environmental phase to the construction phase is related to the \$10.5 million funding gap for the project. The project has been phased to fund and begin construction on several phases. Funding from BUILD will close the gap and allow project completion.

REVIEWS, AGREEMENTS AND PERMITTING

In addition to the aforementioned plans, Veterans Boulevard interchange (phase 3) is subject to Caltrans' review following request for authorization. The City of Fresno has worked closely with Caltrans throughout the design process and does not expect any delays in review. Past permits required are specified on page 44 of the 2013 [project study report](#).

FEDERAL, STATE AND LOCAL APPROVALS

Figure 14 provides links to each of the required planning documents. Phases 1-5 are included in all required State and Federal planning documents.

Figure 18 - Planning Documents		Year
State Transportation Improvement Program		2018
Federal Transportation Improvement Program		2019
Fresno Council of Governments Regional Transportation Plan		2018
Fresno County Intelligent Transportation System Strategic Deployment Plan		2015
Route 99 Corridor Business Plan <i>Included as a Priority Category 4: New Interchanges</i>		2013
Measure "C" Extension Expenditure Plan		2017

PUBLIC ENGAGEMENT

There is significant public support for the project. On March 29, 2017, former Fresno City Councilmember Steve Brandau hosted a town hall meeting to provide a status update for neighborhood residents, receive public comments and discuss funding strategies. The meeting was met with overwhelming turnout. About 300 residents filled a school cafeteria to standing-room only to express their support for the project and their desire it be constructed as quickly as possible. Veterans Boulevard is a standing topic at community meetings.



Figure 19 - Residents attend a community meeting held in 2017 in the project area. Approximately 300 people were in attendance.

In 2018, the City began the [West Area Specific Plan](#) process, which invites residents of the neighborhoods surrounding the project to share comments and concerns related to community needs. Based on survey responses and community conversation results, Veterans Boulevard emerged as a top priority. Community meeting details are available on the plan's [website](#).

The Fresno Council of Governments and the San Joaquin Valley Council of Governments are both strongly in support of the project. As the region's top priority, both groups have organized coalitions to travel as one voice to Washington D.C. to meet with elected representatives and Department of Transportation staff to advocate for funding Veterans Boulevard.



Figure 20 - Residents attend a community meeting held in May 2018 in the project area. Transportation infrastructure continues to be a top priority for residents.

IV. Benefit Cost Analysis

The Benefit Cost Analysis (BCA) Ratio is: 2.91 (7% discount rate). [Section II](#) of this application highlights some of the expected benefits. For additional technical information related to BCA calculations, please see the BCA Technical Memo and calculation workbook submitted attachments on Grants.gov.

V. Capacity to Deliver

The City of Fresno Department of Public Works manages a large capital portfolio of funding from many revenue types that include: the City of Fresno general fund, State of California gas taxes, local Measure C sales tax funding, local assessment districts, transportation grants from local, state and federal sources and developer fees. In FY2019, the department's budget was more than \$188 million. Of this total portfolio, 17.1 percent or \$32.2 million is from Federal Sources. Federal funds are not used for maintenance activities, but are leveraged for capital projects to best multiply the investment. The Public Works Department has a very skilled and experienced team. The Engineering Division has a mix of professional engineers, project managers and engineering technicians, who have assisted in the design development phase. The City of Fresno's Construction Management Division is another highly skilled and

experienced group that specializes in contract management and quality assurance inspections for all of the City's capital projects. The Construction Management Division has participated in the design development phase and is ready to complete the construction phase.

Leadership in Fresno understands the nexus between infrastructure and private development and actively works to spur private investment in the City of Fresno. In his first few years leading Fresno, Mayor Brand has worked tirelessly with Councilmembers, City Manager Quan, the Fresno County Transportation Authority and the Fresno Council of Governments to advance the Veterans Boulevard project. On June 13, 2019 the Fresno City Council [adopted a resolution](#) in support of this application 5-0. Delivering Veterans Boulevard plays a key role in the Mayor's vision to make Fresno the ["Most Business Friendly City in the State of California"](#) by linking residents to opportunity and reducing barriers to business.

Letters demonstrating support for the project from federal, state and local leaders are available on the application's [website](#) and have been submitted as an attachment to the grants.gov package. Support for the project comes from:

- Mayor Lee Brand
- Steve Brandau and Brian Pacheco, Fresno County Supervisors
- The Fresno City Council
- Congressman Devin Nunes (CA-22) and Congressman Jim Costa (CA-16). The project runs along the boundary that officially divides Congressman Devin Nunes (CA-22) and Congressman Jim Costa's (CA-16) respective Congressional districts.
- U.S. Senator Kamala Harris
- U.S. Senator Dianne Feinstein

Additional support comes from both the public and private sector including: Chairman Brain Pacheco, Fresno County Board of Supervisors; Kelly Porterfield, Superintendent, Central Unified School District; Mike Leonardo, Fresno County Transportation Authority; Fresno Council of Governments, San Joaquin Valley Regional Planning Agencies' Directors' Committee; Gryphon Capital; Granville Homes and the Assemi Group. All letters are available on the Veterans Boulevard BUILD website.

Veterans Boulevard will reduce safety costs by \$341.9 million dollars, save 15 million hours of travel time and help get goods to market. An investment in Veterans Boulevard is an investment in safety, quality of life, goods movement and economic vitality.
